SAN BERNARDINO MICROWAVE SOCIETY
c/o Bill Burns, Corresponding Secretary
247 Rebel Road,
Ridgecrest, CA 93555

6-11-94

In the matter of:	)	
	)	
Allocation of Spectrum below 5 GHz Transferred from Federal Government Use	)	ET Docket No. 94-32

RESPONSE TO: NOTICE OF INQUIRY

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
Washington, DC 20554

Re: Reallocation from Government service to non-Government service of spectrum shared with the Amateur radio service.

Dear Mr. Caton,

The San Bernardino Microwave Society (SBMS) is a forty-year old organization comprised of Amateur Radio "pioneers". This group of seventy individuals is "dedicated to the advancement of communications above 1000 MHz". Our membership has operational equipment on all of the microwave bands including 2,300 through 2,450 MHz (what we call the 13 cm band). Our founding members were active on this band shortly after it became available to the Amateur radio service.

Since that time almost fifty-years ago, the SBMS has continuously been active "pushing the envelope" of communications on the 13 cm band as well as the other microwave bands. The vigilance of its members has lead to technological advancements, many of which have been applied to the defense industry as well as well as private sector communications. Some of our members are in fact employed in the industrial community developing the emerging technologies for which the spectrum in the proposed

reassignment is to be used. It is highly probable that some of the technologies used in this new service had their roots based in brain trusts of organizations like ours across this Country.

THE SBMS IS DEDICATED TO EDUCATION

Federal Communications Commission (FCC) notice of inquiry 94-32 states that "this Commission has established the goal of creating a national information infrastructure that will provide access to all as a means of ... educating children ...". The SBMS wholly supports any effort to help to educate or make advanced forms of education available to all Americans. This is one of the primary purposes of the SBMS.

We have continuously done this on several fronts during our forty-year existence. The first order of business after the organization was formed was to publish the first "microwave manual" which was made available to all interested Amateurs. Our monthly meetings have a technical discussion period which lasts about one hour, and many of the topics covered relate to masters or PhD level topics. Always included are discussions relevant to newer members just getting started in Amateur microwave.

A majority of our members are college educated and are willing to share their educational and work experiences with the Amateur community. They are frequently invited to present technical papers or give demonstrations at various technical conferences as well as having technical articles published in related periodicals.

Much of the expertise of our membership was learned in the "field laboratory". The equipment that we build and subsequently operate is used to facilitate the experiments that we have undertaken. Our use of the microwave bands sets this form of Amateur activity apart from the more familiar forms like HF nets, DX competitions, VHF/UHF FM, packet and repeaters (although we heavily depend on these communications methods to support our experimental activities). As a great side benefit we are also able to use our equipment to communicate with one another just for the enjoyment.

Many of our members launched careers that benefited the American people using the practices and technology learned from our group. Without question, all of the prominent American radio "pioneers" were radio Amateurs, and they conducted much of their work using the Amateur radio spectrum. A substantial number of graduating electrical engineers were introduced to electronics and communications through Amateur radio. During wars fought using electronic devices, Amateurs were ready to serve this Country without the need for extensive education.

Amateur radio (and in our case Amateur microwave) is one of the best sources of high-tek education available to the American public. The takeaway of any Amateur radio spectrum, especially microwave spectrum, greatly limits the possibilities of future experimentation. The snowball effect from this will have a

definite impact on our future "brain trust" of electrical and communications engineers. This in turn has a direct bearing on Our ability, as a Nation, to compete in the world marketplace, solve technological problems on Our home shores or to be prepared for Our own defense.

The education issue is just one of the many public benefits offered by Amateur radio. A move to take spectrum away from Amateur radio is a move towards stifling the technical education of Americans.

A QUESTION ABOUT PROCEDURE

As was stated in our response to the NTIA, we "the existing users of the band" feel that little effort was made to find us. Apparently the American Radio Relay League (ARRL) was consulted to find out what activity was ongoing in the band. In its response to the NTIA, the ARRL debunked the myth that "since there are not any 13 cm repeaters listed in the repeater directories, there must not be much activity in the band" (NTIA Preliminary Spectrum Reallocation Report, page 4-38, footnote 30). The ARRL went on to "educate" the NTIA as to how, in its opinion, the band is currently used and what future activity is planned. What appears in the ARRL letter is vastly different than the text which appears in the NTIA report (page 4-18, top paragraph and page 5-14, bottom paragraph).

Another problem with how the NTIA sourced its information is that it assumed that the ARRL is the only source for information regarding activity in the 13 cm band. While the ARRL is the national organization representing Amateur radio, it certainly is not the only source for this data. Look at the number of responses to the NTIA request for public comments. Of the fifteen Amateur radio responses, thirteen came from west of the Hudson River (or Mississippi River for that matter). Many of these thirteen respondents were frequency coordination organizations whose purpose is to keep track of and organize activity in the band.

The ARRL indicated in its letter to the NTIA that it was uncertain as to the level of activity in the band. Apparently the NTIA based its conclusions about activity in the band considering only one source of information and without crosschecking this information with other available sources. This activity between the ARRL and NTIA occurred in September of 1993. Since that date there has been adequate time to find additional band use information resources.

Our point is this. The NTIA was instructed to "avoid excessive disruption of (the) existing use of Federal Government Frequencies by Amateur radio licensees" (NTIA Preliminary Spectrum Reallocation Report, page 5-14, as well as all of the other Federal documents associated with this proposed takeaway). What could be more disruptive than gutting the band, especially without asking for any input from a majority of the existing users of the band?

OUR PROPOSED ALTERNATIVE SOLUTIONS

Because of the technically-distant frequency relationship to adjacent Amateur bands (1,240 to 1,300 MHz and 3,300 to 3,500 Mhz), the 13 cm band (which once was continuous from 2,300 to 2,450 MHz) must be considered as an all-inclusive unit for discussion of the adverse effects of the proposed takeaway.

While the NOI did not specifically request comments regarding 2,300 through 2,310 MHz at this time, any takeaway action (current or future) disrupts current implemented band plans and and associated activities within the 13 cm band. This effectively freezes any new use or growth in the band. Of even more concern is the disruption of almost all existing uses of the band without any insight or hope as to whether the activity will ever be able to be resumed. For this reason the NTIA and the FCC must look at all-inclusive solutions for the Amateur 13 cm band.

As we discussed in our NTIA response, one of the primary uses of the band is for point-to-point linking. Our discussion covered the technical requirements relating to the frequency separation of a receiver and transmitter operating at the same geographical location. Current band plans and usage call for the pairing of the band segment of 2,390 to 2,400 (with appropriate exclusions) with the segment of 2,300 to 2,310 (again with appropriate exclusions). It is for this reason that point-to-point linking depends heavily on retaining the 2,300 to 2,310 MHz band segment. Taking the 2,300 to 3,210 MHz band segment essentially ends this use of the 13 cm band.

The other primary reason for keeping the 2,300 to 2,310 MHz band segment is the fact that the nationally/internationally recognized weak signal calling frequency 2,304 MHz sits near the middle of this segment. This point seems to have been lost on the NTIA as their chart showing frequency usage does not indicate this type of activity in this portion of the 13 cm band (table 3-6, page 3-6).

The SBMS has operated a propagation beacon near 2,304 MHz for almost twenty-years now. All of the current weak signal activity occurs within +/- 500 KHz of this frequency. Reassignment of this portion of the band renders all of the existing equipment and practices employed by weak signal operators useless. Since this has historically been one of the most prolific uses of the 13 cm band, removing 2,300 through 2,310 MHz must certainly be considered disruptive.

Obviously, we want to keep the entire band without having any of it taken away. Our primary request for consideration of band assignment would be that once the NTIA has released the segments of 2,300 to 2,310 MHz and 2,390 to 2,450 MHz, that they be assigned to the Amateur radio service as the primary user. It has already been demonstrated that we can effectively share with all of the current co-users of the band (which is not true for future co-users in the band).

As a secondary position, we would like to present the following solution to the proposed takeaway. We would like to keep the frequencies of 2,300 through 2,305 MHz in the Amateur radio service. This would accomplish several tasks which would:

1. Allow for continued and limited expansion of use of point-to-point linking by allowing for reasonable frequency separation between receiving and transmitting frequencies at single geographic locations.

2. Allow for the retention of the frequency of 2,304 MHz, which is the historically recognized national/international weak-signal calling frequency in the 13 cm band.

3. Allow for protection of services operating in the adjacent band just below 2,300 MHz.

To facilitate implementation of the NTIA and FCC reassignment, we would give the frequency band from 2,417 through 2,422 MHz back to the reassignment pool. We would still request the the remaining Amateur portions of this band be assigned on a primary-user basis.

This is just one of the possible solutions to help reduce the disruption of the Amateur use of the band. It would be appropriate for the FCC and NTIA to open a forum under which a compromise agreement could be reached between the Government and radio Amateurs. Since there is a limited amount of spectrum to pick and chose from, we are certain that an agreement could be quickly be reached. This would serve to minimize disruption to the Amateur service and provide for satisfactory implementation of an emerging technology band.

SUMMARY

We support the Commission goal of dedication to education of American children and the American people. We feel that a diminished availability of Amateur radio spectrum is detrimental to that goal. We recognize the need for emerging technology, and as a group the SBMS and Amateur radio as a whole have certainly done their share in helping to "pave a number of onramps on the information superhighway".

Additionally, we feel that the NTIA report, which is otherwise extremely thorough, has one basic flaw concerning the usage of the Amateur 13 cm band. Since there was not an adequate call for information as to the current usage of the band, the NTIA arrived at an incorrect conclusion concerning the amount of actual activity in the band.

The proposed band takeaway will cause severe disruption of current and future operations of Amateur services, both within the 2,300 to 2,310 MHz and 2,390 to 2,450 Mhz band as well as other Amateur Services supported by this band. We propose alternative plans to reduce this disruption and promote a forum which

allows Amateur input as to how spectrum is allocated.

Thank you for the opportunity to respond to the NOI concerning the 13 cm spectrum re-assignment.

Sincerely,

For the SBMS membership
David E. Laag, President